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UPDATING ECONOMIC OPERATIONS IN THE POST INDUSTRIAL AGE

by

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UPDATING ECONOMIC OPERATIONS IN THE POST INDUSTRIAL AGE

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ABSTRACT

This thesis addresses the economic aspect of coercive diplomacy to show that new instruments of coercive economic operations created by information age technology 1) redefine coercive economic operations and that 2) the vulnerabilities and concerns brought about by these new economic instruments change the impact coercive economic operations have on coercive diplomacy. This thesis initially looks to the past, but the intention is to guide continuing future thought on coercive economic operations. This is important for coercive diplomacy because policy makers must be aware that ushered in with present and future technologies are new economic instruments which impact coercive economic diplomacy.

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I. INTRODUCTION

This thesis addresses the economic aspect of coercive diplomacy to show that new instruments of coercive economic operations created by information age technology 1) redefine coercive economic operations and that 2) the vulnerabilities and concerns brought about by these new economic instruments change the impact coercive economic operations have on coercive diplomacy. This thesis initially looks to the past, but the intention is to guide continuing future thought on coercive economic operations. This is important for coercive diplomacy because policy makers must be aware that ushered in with present and future technologies are new economic instruments which impact coercive economic diplomacy.

Coercive economic operations are economic measures designed to achieve the political objectives of the state. The concept of coercive economic operations has been around since ancient times when man first bartered, but there are no historical records to prove that any true economic thought or much less economic operations existed prior to the nation-state's concern for the relationship between strategy and economics. Coercive economic operations are relatively new when compared with the history of technology and economic development.

Technological innovation has been the most dynamic source of economic change and development from ancient times and especially in recent centuries. Technological change and economic development begin in the Paleolithic era.

In this period, contact between tribes or bands was rare, but not so rare as to prevent some primitive barter trade. Technological evolution was very slow during this period. In ancient times technological development and economic operations were centered around the basic need for survival. As the millennium passed, technology slowly advanced, and along with it evolved early commerce. The Neolithic age brought technological changes in tools, agriculture, and domestication of animals, which meant tribes became less nomadic, and civilizations began to emerge. Civilizations became more established over the next thousands of years, and people were able to establish relatively permanent settlements, accumulate stores of material goods, wealth, and devote time to nonsubsistence activities. As urban civilization evolved around the third millennium to the Christian era, division of labor, economic organization, and political structure become increasingly more complex.

It is during this time period (432 BC) that an example of the early use of coercive economic operations are found. This coercive economic operation is in the form of sanctions and comes from ancient Greece. The Megarian decree, issued by Pericles of Athens, restricted entry of Megarian products into Athenian markets. This sanction was imposed in response to Megara's attempted expropriation of territory and the kidnapping of three women. Aristophanes, a writer of the time, claims the sanction played a major role in triggering the Peloponnesian War between Athens and Sparta.

From the period of classical civilizations, such as those of Greece and Rome, to around the sixteenth century, empires, kingdoms, and other local

government units possessed extensive powers of economic control and regulation. They levied tolls or tariffs on goods entering and leaving their jurisdictions; local guilds of merchants and artisans fixed wages, prices, and otherwise regulated working conditions. Economic operations during this period were at the local level and predatory in character as city-states expanded in proximity to one another and struggled over boundaries and water rights. The motivation for economic activity was based on the quest for power and domination. (Cameron, 1997)

The growth of nationalism and the increasing interregional and international commerce during the late renaissance period brought about the first phase of early economic thought as a discipline rather than a means of survival or something that only peasants were concerned with. The economic policies of the nation-states during the sixteenth century were to build up economic power to strengthen the state and to use the power of the state to promote economic growth and enrich the nation. The objectives were to obtain revenues to maintain the greatly expanding military forces in order to be more self-sufficient in times of war. This very attempt to obtain revenues by gaining more territory or trade at the expense of others often led to war.

The second phase of economic thought began with the publishing of <u>Inquiry into the Nature and Cause of the Wealth of Nations</u> (1776) by a Scottish philosopher Adam Smith. This was Smith's attempt to systematize the economic policies of his day which came to be known as the mercantile system. The discipline of economic theory continued to develop with different

political and theoretical approaches. Economic development throughout the ages continued to be linked to technological advances. These advances laid the foundation for the industrial revolution and continue to drive capitalism today. (McCormick, 1987)

There may be a rich history of coercive economic operations prior to mercantilism, but it does not exist in recorded history. Mercantilism, in this respect, marks the period when economic operations entered the realm of diplomacy. The dawn of modern industry which lead into the industrial age became the basic determinant of economic development and economic thought after mercantilism. As economic development continued, it became increasingly evident to nations-states that economics could be a plausible tool for coercive diplomacy.

Prior to and including World War I (WWI), imposed coercive economic operations mainly foreshadowed or accompanied war. An example of a coercive economic operation which foreshadowed war is the United States embargo on British goods (1809). This embargo was in response to the British Naval Acts limiting United States trade with France and lead to The War of 1812. Following the out break of war against Germany in 1914, the United Kingdom published a list of contraband items and instituted a partial blockade against German ports to stop the transfer of contraband items. This partial embargo, which is an example of a coercive economic operation which accompanied war, also became a complete embargo in 1915 as a reprisal for German submarine warfare. After WWI economic operations were considered but not imposed as an alternate to

armed conflict. However, economic operations continued to be imposed to disrupt military adventures or to compliment a war effort. This is seen in the cases of the League of Nations verses Greece (1925) where Greece was being pressured to withdraw it's occupation of Bulgaria and with the Alliance Powers verses Germany and Japan (1939-1943) to undermine the war efforts of Germany and Japan.

The move to actually use coercive economic operations as an alternative to armed conflict did not come into effect until after World War II (WWII). There was a change in attitude and growing reluctance of nation-states to use armed force with technological innovation of nuclear weaponry and its capability for mass destruction. The bomb of the 1940's and weapons of mass destruction of the 1990's have encouraged states to seek coercive economic operations as an alternative to armed conflict and mass proliferation.

Economic operations have increased with each decade since their early use. Coercive economic operations are used in coercive diplomacy for many reasons deemed important by the naked self interest of the implementing state as a cure for many foreign policy goals and dilemmas. The early use of traditional economic operations has been to undermine the war effort, help destabilize governments, and settle expropriation claims. Additionally, later use of traditional coercive economic operations has been to halt nuclear proliferation, protect human rights, and most recently, combat terrorism, and prevent mass proliferation by weapons of mass destruction.

Though the willingness is high to impose economic operations to achieve compliance with foreign policy goals, the success rate for traditional economic operations is relatively low. This may lead one to think that states are imposing economic operations with little understanding of their likely impact on the target state. Though the success rate of coercive economic operations is low, they unfoundedly guarantee, with a reasonable amount of certainty, that pressure will be applied toward accomplishing a political goal.

The appropriate economic instrument to use has much to do with the amount of pressure it can exert. As technology advances, opportunities for new economic instruments surface, which impact coercive economic diplomacy.

This thesis investigates to what extent new instruments of coercive economic operations created by information age technology redefine coercive economic operations and examine whether the vulnerabilities and concerns brought about by these new economic instruments change the impact coercive economic operations have on coercive diplomacy. This thesis redefines contemporary coercive economic operations to account for technological advances and shows how the new vulnerabilities and concerns from the new economic instruments brought about by technological advances impact international and interstate coercive economic diplomacy.

This thesis is divided into several sections. The first section is the introduction. The second section defines coercive economic operations and its subcategories of economic coercion and economic warfare for clarity and consistency. The third section discusses coercive economic operations through

the Industrial Age and the traditional economic instruments used in coercive economic diplomacy. The fourth section examines the success variables for economic operations. The fifth section discusses coercive economic operations in the Post Industrial Age and how Post Industrial Age economic operations introduce new economic instruments that 1) are targeted at new dependencies brought about through technology, and 2) have created new vulnerabilities and new concerns for coercive economic diplomacy. This thesis will conclude by showing the necessity for policy makers to constantly rethink and update coercive economic operations in order to implement and make use of the most effective and appropriate economic instruments to be used as coercive diplomacy.

II. COERCIVE ECONOMIC OPERATIONS DEFINED

A. INTRODUCTION

Governments often use coercive diplomacy to achieve their foreign policies. Coercive diplomacy is the use of pressure to achieve the foreign policies or political objectives of a particular government or governments. This pressure can be extended in many forms: diplomatic, political, economic, military, or some combination thereof. The pressure can be either unilateral, one on one; or multilateral, several on one. There can be overt or unpublicized use of pressure and threats of force or actual use of force. Coercive diplomacy applies the uses of pressure to achieve a political objective through deterrence, compellence, and impedance. Deterrence is when it is made known to a state that some specific behavior is not acceptable and that similar behavior will cost them, thereby preventing the state from repeating the unwanted behavior. With deterrence there is a retaliatory means of preventing unwanted behavior. Compellence is persuading a state to change its behavior. In effect the state is forced or constrained to do what it does not want to do. Impedance is preventing the state from performing the unwanted behavior. With impedance the capacity to perform the behavior is removed.

When economic pressure is imposed as coercive diplomacy, it is called coercive economic operations. Coercive economic operations are imposed by Senders on Targets. A Sender, as defined in <u>Economic Sanctions Reconsidered</u>

(1985) by Hufbauer, Schott and Elliot, is the state, states, or international organization that imposes the economic operation. A Target, therefore, is the intended recipient of the Sender's economic operation. When one state engages as the Sender of an economic operation, it is termed unilateral. Multilateral is when more than one state engages as the Sender. This thesis will consider bilateral and international economic operations as multilateral. A Target may also comprise of one or more states. For example, in 1948 the Soviet Union imposed the Berlin Blockade against the Unites States, United Kingdom, and France to prevent West German economic recovery and formation of a West German government.

Coercive economic operations are divided into two types of economic measures: economic coercion or economic warfare. Economic coercion is modifying behavior by economically applying pressure to a Target to deter undesired behavior or compel desired behavior to achieve a political objective. In other words, economic coercion is designed to modify "will" and it does this in two ways: 1) by keeping the Target from doing what it wants, and 2) getting the Target to do what it does not want to do.

Economic warfare is impeding behavior by economically undermining a Target thereby retarding or preventing the Target from conducting the undesired behavior. Economic warfare is designed to undermine the Target's ability. An example of the difference between economic coercion and economic warfare is: Actor A wants to prevent Actor B from fighting with him. Actor A can use coercion and attempt to persuade Actor B through reason,

bribes, and hints of a big brother at home. Or, Actor A can use warfare and cut off Actor B's arms thereby preventing him from fighting at all. Both economic coercion and warfare can be imposed in a non-use of force or use of force capacity. Economic coercion and warfare can also be overt or unpublicized.

Figure 1 diagrams coercive economic operations in the traditional sense. Coercive economic operations are subdivided into economic coercion and economic warfare. The instruments of economic coercion and warfare can be imposed in a combative or non-combative capacity and are further subdivided as such. The dotted box represents traditional economic sanctions.

Sanctions are instruments of coercive diplomacy also designed to modify behavior or undermine capability. Webster's New World Dictionary (1986) defines sanctions as:

> 5.a. A coercive measure, as a blockade of shipping, usually taken by several nations together, for forcing a nation considered to have violated international law to end the violation.
> 5.b. a coercive measure, as a boycott, taken by a group to enforce demands.

This thesis will define sanctions according to the dictionary meaning. Sanctions will therefore be used to describe instruments of economic coercion and classical economic warfare in support of economic operations.

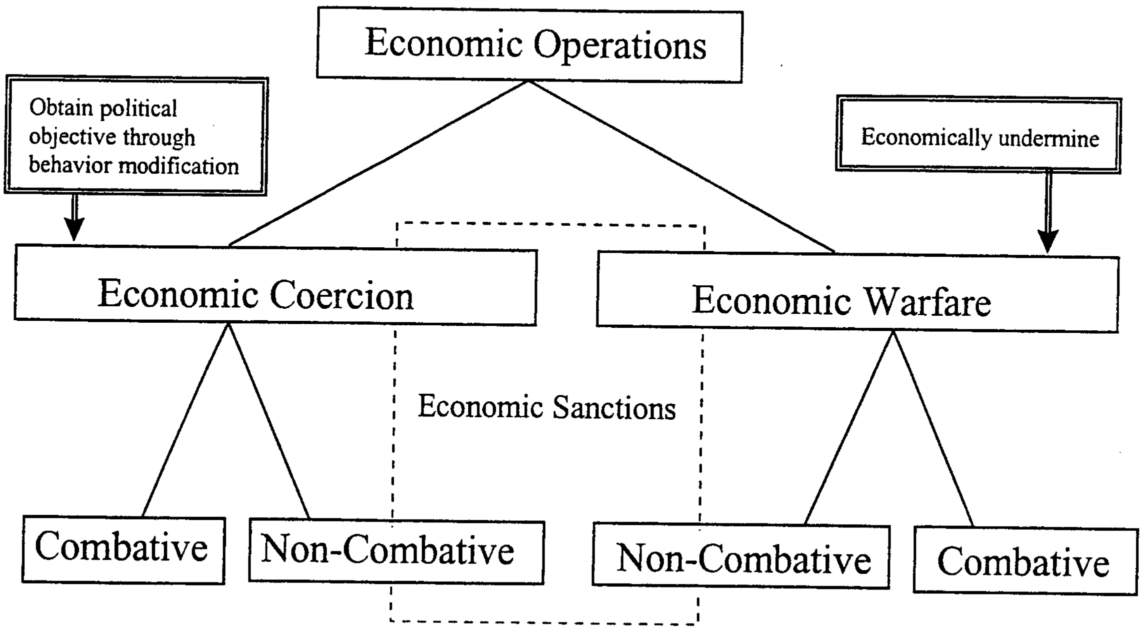

Figure 1. Traditional Economic Operations

B. ECONOMIC COERCION

Economic coercion is pressure applied through economic instruments to modify behavior. Economic coercion attacks the target's will versus economic warfare, which undermines the target's ability. Instruments of economic coercion are either combative or non-combative. Combative instruments use the threat of force or actual force in support of the economic instrument. Non-combative instruments, by design, solely use threat of or actual economic deprivation as the motivating factor. The categories of economic instruments for economic coercion are: aid, trade, and finance.

Aid is defined as grants, loans, and technical and material assistance provided on a grant or concessional basis by a donor to a recipient. Aid can be used to establish positions of influence for a sender. Much of the United States aid to Latin American nations is aid to gain or keep influence. Aid, which is often difficult to distinguish from aid for influence, can also be used to support a target government or regime. Aid from the United States to regimes in Latin American has also been used to establish United States support of a particular regime. A sender can use aid to apply shear pressure. Pressure is applied by the actual reduction, threat of reduction or termination of aid unless certain conditions are met by the target state. (Wientraub, 1982, pp. 12) An example of this is the United States versus Ceylon (1961-1965) where the United States cutoff aid to Ceylon for the expropriation (seizing of assets) of United States and United Kingdom oil refineries.

Trade is the exchange of goods and services including communications, transportation, and technology (materials and information). Trade is a major issue for most countries and very integral to their foreign policy. "Trade as an instrument of economic coercion must involve non-routine uses of trade for the purpose of applying economic pressure on the target." (Weintraub, 1982, pp. 15). Trade as economic coercion can be implemented positively as an advantage for the target. This is when the sender uses trade attempts to gain favor with a target much as when the United States wanted to promote détente with China by extending trade advantages in the 1970s. Trade as an economic coercion instrument can also be used negatively as a restriction on imports and

exports. The United States retaliated against Iran in 1979 for the seizure of hostages by restricting shipments of military spare parts to Iran.

Conceptually, economic coercion in the form of finance is more difficult to define than aid or trade. Both aid and trade are often linked to finance. The increase or decrease of aid or trade to a target can increase, reduce, or halt the flow of capital to the target. Financial coercion is implemented by the access or denial of loans, credit, and capital markets. The waning economy of South Korea today makes them a target for investment coercion. Another example of investment coercion is the United Stated Trade Act of 1974, which restricts use of government credit programs to countries on the basis of their emigration policies.

C. ECONOMIC WARFARE

Economic warfare undermines the targets ability to conduct a certain behavior or activity, opposed to economic coercion which attacks the target's will. Economic warfare economically impedes a target through combative or non-combative instruments. Force is used to either actually impair a target or to threaten a target's economic value. Traditionally combative instruments use force against a target economy to undermine it's ability to operate in a wartime setting. An example of this is during WWII where the Allies bombed Germany's oil, ball bearing, and rubber facilities. The Allied bombing campaign was designed to attack Germany's war economy. Non combative instruments, in a traditional setting, were used as ideological and nationalistic containment

policies. An example is the United States containment policies against communism during the Cold War. Non-combative instruments are also used to limit a target's potential military/technical development. This is often seen with nuclear weapons as the major world powers attempt to control the spread of nuclear weapons. An example of this is in 1976 when the United States threatened too impose sanctions against Taiwan for allegedly reprocessing spent nuclear fuel into weapons grade material. The categories of economic instruments for economic warfare are finance and trade.

Finance as an economic instrument of economic warfare involves investments, freezing of funds, and expropriation of assets. Financial instruments of economic warfare are aimed at the financial relationship rather than the commodity. For example, following the invasion of the Falklands, Britain froze Argentinean financial assets in Britain and suspended new export credits. Britain could have called Argentina into default, creating a financial crisis for Argentina. (Daoudi, 1983, pp. 113)

Trade as an instrument of economic warfare includes sieges, blockades, embargoes, and boycotts on goods and services. A siege uses armed force to apply pressure by cutting off goods and service. Sieges are designed to decrease the target's ability to wage war. Sieges are usually conducted during war and were common prior to the development of sea power.

A blockade is the prevention of commercial activity with a target. An example of a combative blockade is Allied Powers versus Germany (1939) where a complete blockade on seaborne German exports and imports was

placed to help defeat the German war effort. In 1948, the Soviet Union imposed a non-combative blockade on goods, services and travel against the United States, the United Kingdom, and France in an attempt to prevent the economic recovery of West Germany and formation of a West German government.

An embargo is the suspension or prohibition of trade with a target of a particular commodity. An ongoing example of an embargo is the trade embargo against Cuba by the United States. In 1935, the League of Nations imposed an embargo against Italy in response to the invasion of Ethiopia. The embargo was designed to halt the invasion but ironically was imposed on arms and not oil and coal, two essential items for a war economy. (Losman, 1979, pp. 2)

A boycott is the abstaining from conducting specific commerce with a target. A boycott was established in 1947 by the Arab League against Israel. The object was to impede Israeli development by boycotting sales of goods, services and land to the Zionist.

III. ECONOMIC OPERATIONS IN THE INDUSTRIAL AGE

A. OVERVIEW

Throughout the nineteenth century, the variety of materials and products entering into international trade continuously increased as a result of advances in technology and transportation, discoveries of new sources of energy, and the acquisition of overseas empires. Colonization added to the diversity and frequency of links between countries; thus international commercial and capital transactions assumed major dimensions. Commerce was an international activity necessary for the maintenance of industrial activity and individual national prosperity. Increased participation in international trade, investment, and other international financial links multiplied over time. Industrial Age economic operations have typically focused on disrupting or threatening to disrupt the flow of goods and commodities. The sender, by influencing the flow of goods and commodities, brings about behavior modification of the target. Post Industrial Age economic operations, though still encompassing goods and commodities, are more systems and information oriented.

The economic activities of the Industrial Age broadened the realm of economic operations and the implementation of economic warfare and coercion. The increased participation in financial markets as well as a desire to prevent war led to the formation of an international law enforcement organization. The League of Nations was formed as an international policeman for the prevention

of war and the settlement of disputes through a set of internationally accepted laws. One instrument the League of Nations would use to enforce the will of the international community was the imposition of economic sanctions on an international scale. However, the League of Nations suffered serious weaknesses in its design that ultimately lead to its downfall. Though the League of Nations did not survive, the idea of collective security through economic operations did continue to evolve.

The League was eventually succeeded after WWII by the United Nations (UN), which gave greater emphasis to the enforcement process. This process was activated and administered by the United Nations Security Council. The UN was established as an instituted force for stability, with the right to help ensure peace through institutionalized norms of behavior, which would encourage the routine settlement of disputes and limit the use of military force. (Doxley, 1996, pp. 3) Economic operations could now be imposed on a multilateral level by an international organization with self-imposed authority. This even further broadened the political and economic aspects of economic operations.

International organizations did not in and of themselves introduce multilateral economic operations. They did, however, provide a formal setting through which to conduct such operations. International organizations impose economic operations to modify behavior on a multilateral level. But, as seen during the Cold War, competing ideologies and moral claims create barriers to international cooperation. The individual state, on the other hand, imposes economic operations to modify behavior in the interest of the state. It is difficult

for individual states to garnish multilateral support, but if the individual state is successful, the likelihood of success is as probable as that of the international organization.

Post Cold War economic operations tend to focus on international norms of human rights and democratic values. The post Cold War superpowers impose economic operations to achieve internal reform in target states. The industrial age promoted the social, commercial, financial, and technological natures, which provided the opportunity for a broad range of economic coercion and warfare measures that are carried on into the Post Industrial Age.

B. ECONOMIC INSTRUMENTS OF THE INDUSTRIAL AGE

Three basic categories of economic instruments have been used during the Industrial Age. These instrument categories are aid, trade, and finance. Each category can be further delineated into specific instruments. Table I shows the economic instruments used to imposed economic sanctions from 1946-1986.

Aid instruments are grants, and technical and material assistance provided to a target. Table I shows that from 1946-1986, specific instruments used in the aid category were humanitarian grants and material and technical assistance. Military grants and material and technical assistance were also instruments of aid employed from 1946-1986. Senders attempted to influenced the target's behavior by the cessation, reduction, or restriction of these instruments.

Trade consist of instruments that deal with the exchange of goods and services including communications, transportation, and technology. Table I shows that specific trade instruments imposed from 1946 -1986 were boycotts, embargoes, blockades, suspensions, and restrictions of goods and services. Senders thereby influenced exports, imports, and sales of goods in an attempt to modify a target's behavior.

Finance is the flow of capitol and banking services. Finance is often linked to aid and trade instruments. Specific financial instruments used during the Industrial Age were loans, excise tax, and banking services. Loans as instruments consisted of the issuance, suspension, or adjustment of actual loans, loan credit terms, and loan interest rates. Excise tax was imposed on exports and imports as an instrument of economic diplomacy. Freezing or withholding cash deposits and financial assets and currency degradation were specific instruments of banking services used as economic sanctions from 1946 - 1986 (See Table I).

C. ECONOMIC COERCION IN THE INDUSTRIAL AGE

As discussed in a previous section, most economic operations prior to WWII can be classified as economic warfare, for they either foreshadowed or

Table I. Economic Sanctions 1946 - 1986.

Sender and target	Issue	Economic instrument used
Arab League v. Israel (1946-)	Palestine	Total boycott, shipping blockade
US, UN v. North Korea (1950-)	Korean War	Naval blockade, Total embargo, Asset freeze
UK, US v. Iran (1951-53)	Expropriation	Aid, Economic blockade
India v. Portugal (1954-61)	Surrender Goa	Banking services, Currency degradation, Suspend trade
US, S. Vietnam v. N. Vietnam (1954-)	Vietnam War	Freeze assets, Aid, Trade embargo
US v Israel (1956-83)	Border issues	Aid, Tax incentives, Military arms export
US, UK, France v. Egypt (1956)	Suez Canal	Freeze assets, Military arms export
USSR v. Finland ((1958-59)	Nightfrost Crisis	Currency degradation, Loan repayment, Technical trade, Imports
US v. Dominican Republic (1960-62)	Trujillo	Trade embargo, Aid
US v. Cuba (1960-)	Castro	Total embargo, Aid
US v. Ceylon (1960-)	Expropriation	Aid
USSR v. Albania (1961-65)	Destabilization	Suspend all trade, Aid, Wheat credit
US v. Brazil (1962-64)	Goulart	Aid
UN v. South Africa(1962-)	Apartheid	Shipping boycott, Loan restrictions
US v. United Arab Republic (1963-65)	Yemen and Congo	Aid
Indonesia v. Malaysia (1963-66)	"Crush Malaysia"	Suspend trade
UN v. Portugal (1963-74)	African Colonies	Boycott, Oil embargo, Loans
France v. Tunisia (1964-66)	Expropriation	Aid, Trade tax
US v. Chile (1965-66)	Copper price	Aid, Banking, Loan services
UK, UN v. Rhodesia (1965-79)	Black Majority Rule	Aid, Freeze assets, Petroleum embargo
Nigeria v. Biafra (1967-70)	Civil War	Blockade, Bank deposits

Table I. Economic Sanctions 1946 - 1986 (continued).

Sender and target	Issue	Economic instrument used
US v. Peru (1968-74)	Expropriation	Aid, Loan services
US v. Chile (1970-73)	Allende	Financial credit
US v. India and Pakistan (1971)	Bangladesh	Aid, Military arms export
UK, US v. Uganda (1972-79)	Amin	Aid, Trade embargo
US v. South Korea (1973-77)	Human Rights	Military aid, loan and export suspension
US v. Turkey (1974-78)	Cyprus	Economic and military aid embargo
Canada v. India (1974-76)	Nuclear Explosion	Nuclear aid, Spare parts trade
US v. USSR (1975-)	Emigration	Trade, Banking services
US v. Uruguay (1976-81)	Human Rights	Military aid, Banking services
US v. Taiwan (1976-1977)	Nuclear Reprocessing	Nuclear fuel export withheld
US v. Paraguay (1977-81)	Human Rights	Military aid, Loans
US v. Guatemala (1977-)	Human Rights	Bank services, Loans, Military aid
US v. Nicaragua (1977-79)	Somoza	Military and economic aid
US v. El Salvador (1977-81)	Human Rights	Economic aid, Loans
US v. Brazil (1978-81)	Nuclear Safeguards	Nuclear supplies export
Arab League v. Egypt (1978-83)	Israel Treaty	Total trade and finance boycott
US v. Libya (1978-)	Gadhafi	Military, trade, and oil embargo
US v. Iran (1979-81)	Hostages	Oil boycott, Freeze assets, Arms export
US v. USSR (1980-81)	Afghanistan	Grain embargo, Fishing trade
US v. Iraq (1980-82)	Terrorism	Military arms export
US v Iran (1984-)	Terrorism	Arms, trade embargo, Freeze assets
US v Syria(1986-)	Terrorism	Arms, trade embargo, banking services

The cases are taken from Hufbauer, Schott and Elliot's Economic Sanctions Reconsidered (1985).

accompanied war with a goal of defeating a war effort. After WWII, modifying behavior of a foreign government without armed conflict was the objective of economic diplomacy. Aid, trade, and finance were the instruments of economic coercion used after WWII to attempt to modify the behavior of foreign governments over foreign policy disputes. Specifically, the goal of post WWII economic coercion was to deter an action that would have taken place or compel an action to occur. The United Kingdom used aid and an economic blockade as instruments of economic coercion to modify the expropriation behavior of Iran from 1951-53. The United States used aid, tax incentives, and military export restrictions as instruments of economic coercion against Israel (1956-83) to modify their behavior regarding Palestine and border rights. The Soviets used the suspension of trade, restricted economic aid, and wheat credit in an attempt to destabilize the government of Albania (1961-65).

In the Industrial Age, the protection of human rights became another objective goal of economic diplomacy. The United States began a campaign in the 70s imposing instruments of economic coercion to bring about reform of human rights in Latin America and around the world. The initial goal of economic coercion to defend human rights was often coupled with the larger goal of encouraging support for democracy. Economic instruments used in sanctions against human rights violations in Uruguay (9176-81) were restriction of military aid and banking services. The restriction or cessation of military aid was a common economic instrument used for human rights violations in sanctions with Paraguay (1977-81) and Guatemala (1977-). Loan restrictions were also

common economic instruments used in sanctions imposed for human rights violations in Paraguay (1977-81), Guatemala (1977-), and El Salvador (1977-81).

There was a push in the 1970s and 1980s to establish nuclear safety standards and regulate the escalation of nuclear weapons. Economic diplomacy was mainly imposed by the United States and Canada in attempts to control the acquisition of nuclear explosive capabilities and to control the reprocessing of spent fuel. The United States used trade as the economic instrument by stopping the shipment of nuclear fuel to Taiwan (1976-77) in order to persuade them to stop nuclear reprocessing. Canada (1974-76) used sanctions against India to stop India's testing of nuclear weapons. The economic instruments of the sanction were suspension of nuclear aid and spare parts shipments.

World attention was initially focused on terrorism in 1960 with plane hijackings and then again in the 1970s with the killing of the Israeli athletes at the 1972 Olympics in Munich. In 1980 the United States government began to list countries with suspected or know terrorist activities or terrorist suppliers. The United States imposed instruments of economic coercion on these listed countries in an attempt to limit their terrorist activities or suppliers. In 1980-82, the United States imposed a sanction against Iraq in response to Iraq's support for an active terrorist group. Suspension of military arms exports was the economic instrument used to implement the sanction. The United States also imposed sanctions on Iran (1984-) and Syria (1986-) in response to terrorism.

The economic instruments used to impose the sanctions were arms and trade embargoes, freezing Iranian assets, and denying banking services for Syria.

D. ECONOMIC WARFARE IN THE INDUSTRIAL AGE

Prior to the Industrial Revolution, economic warfare was limited to disrupting the small volume of international trade due to the fact that trade represented a generally minor element of economic activity in any country. (Doxley, 1971, pp. 15) During the Industrial Age, access to minerals such as iron ore, petroleum, cooper, manganese, nickel, and other alloys and to commodities such as rubber and cotton were vital for industrial powers to maintain the war effort, for no states are self sufficient. "Economic strength has always been recognized as a vital component of power and in the course of war it is an obvious target for attack by military as well as by economic means." (Doxley, 1971, pp. 14). The classical instruments of economic warfare were blockades, embargoes, and military actions. An example of military action as an instrument of economic warfare is the WWII Allied bombings of industrial targets such as oil refineries and rubber plants. These bombings were designed to incapacitate the German war effort.

The growth of the large scale manufacturing industry during the Industrial Age in Europe and the United States, as well as other parts of the world, opened further possibilities for economic warfare. The world also moved toward a more non-combative implementation of the instruments of economic warfare. Economic warfare is imposed in combative and non-combative roles. The

instruments of economic warfare from 1946-1986 (See Table I) were trade and finance. Specific trade instruments are blockades, embargoes, and boycotts. Traditional financial instruments of economic warfare are asset freezes and aid cessation or reduction.

Combative instruments of economic warfare have the threat or actual use of force in their implementation. In 1950, the United States implemented a naval blockade, total trade embargo, and freezing of assets of North Korea in response to the invasion of South Korea and to impede the North Korean war effort. The actual use of force accompanied these sanctions. In 1954, the United States preceded the conflict in Vietnam with the use of economic instruments. Asset freezes, aid suspension, and total trade embargo were the means of economic warfare to impede North Vietnam's ability to wage war. The goal was to bring about a political solution to the turmoil between North and South Vietnam.

Arab League v. Israel (1946-) is an example of instruments of economic warfare imposed in a non-combative role. The Arab League implemented a trade blockade and a boycott of Jewish business and services to bring about the economic collapse of the Zionist. The collapse of the Zionist would prevent the creation of the State of Israel. A famous example of the non-combative use of economic warfare is the United States against Cuba (1960-). The United States imposed a total embargo and canceled aid to Cuba in an attempt to undermine Fidel Castro and his regime.

Table I illustrates the role economic operations have played in conduct of foreign policy within the Industrial Age from 1946-1986. The instruments, aid,

trade and finance, whether their nature was one of economic coercion or economic warfare, are goods, services, and commodity oriented. During the Industrial Age, the willingness to impose economic operations, as well as the amount of certainty that a foreign policy goal would be achieved by the economic operation, was relatively high.

IV. SUCCESS VARIABLES FOR ECONOMIC OPERATIONS

There is an ongoing debate over whether economic operations are effective tools for the implementation of foreign policy. Of over 105 worldwide cases studied by Hufbauer and Schott (1985), only 35% were successful. This is a generally accepted figure among experts in the field. A successful sanction as defined by Margaret Doxey is "one which succeeds in producing the desired behavioral response from the individual or group to which it is communicated." (Doxey, 1972, pp. 529). This is an adequate definition of success, but for this analysis Hufbauer and Schott provide a better tailored definition which states that "the success of an economic episode—as viewed from the perspective of the sender country—has two parts: the extent to which the policy outcome sought by the sender country was in fact achieved, and the contribution made by sanctions to a positive outcome." (Hufbauer and Schott, 1985, pp 32). We follow this view.

There are many correlates, which have been and need to be explored before a model can be constructed for the successful implementation of economic operations. One may argue that a conclusive model of economic operations is impossible due to the inconsistent and unpredictable behavior of leaders, citizens, and states. However, a conclusive model will not be based on correlates derived from empirical study, but rather on the preliminary issue of bargaining.

This analysis will make no attempt to evaluate the merits of the particular foreign policy pursued through the use of economic diplomacy. Rather, it will focus on examining analytically and then empirically the variables that determine the probable success or failure of economic operations.

A. LEVERAGE MODEL AND SUCCESS OF ECONOMIC OPERATIONS

Companies pursuing corporate strategies, candidates running for political office, and members of Congress trying to pass a bill are playing a game. Each player in these games would like to end the game with the highest possible payoff. Being successful in the game is based on leverage potential and the cost to counter the leverage. In the end, the players reach a bargain. (Straffin, 1993, pp. 1) The game is therefore a bargaining relationship, and the key to success or failure is leverage. Leverage is the power to act effectively in the bargaining relationship. Leverage is derived from the relative degree to which one is in a position to threaten and/or promise something of value. For example, Actor A will do something for Actor B if Actor B does something for Actor A, or Actor A will do something to Actor B if Actor B does not do something for Actor A. The key to Actor A's success is the amount of leverage that Actor A can apply. Actor A must be able to get in a position to offer or to threaten to take something of value from Actor B. The more leverage Actor A has, the better the position Actor A is in to offer or to take something of value from Actor B. Consequently, Actor B, being a rational player, will attempt to counter Actor A's leverage. The degree to which Actor B can counter proportionally affects the

impact of Actor A's leverage. Leverage is therefore the basic element to success or failure in a bargaining relationship.

There are three variables that determine one's ability to bring leverage to bear. First, Actor A either has something, or is able to take something Actor B values. It does not matter what the object of value is, but that Actor B places intrinsic value in it. Actor A can take something of value either directly or indirectly. When Actor A takes something indirectly, it is done through a third party, hence a boomerang effect. For example, Actor A imposes an action on Actor B which prevents Actor B from manufacturing widgets. Actor C is now affected because of its dependence on widgets. Actor A in effect has leverage over Actor C.

The second variable is the credibility of Actor A's offer or threat to take something of value from Actor B. Credibility is the quality, capability or power to elicit belief in the offer or threat to take something of value. The credibility is either real or perceived. One has real credibility when there is a record of following through with offers and threats. If one does not have a record of following through, then essentially one does not have a tangible credibility. In the leverage game however, perceptions are reality. If Actor A is strong, but Actor B thinks Actor A is weak, then Actor B is not going to accept Actor A's offer or threat to take of something of value. Actor B is going to stand and fight. The reverse is also true, if Actor A is weak, but Actor B thinks Actor A is strong, then Actor B will back down from a fight and consequently accept Actor A's offer or threat.

The third variable is the expected cost of compliance (CC). The cost of compliance is the cost associated with doing something against ones will in order to gain or retain something of value. Cost of compliance is how Actor B weighs the value of what he wants against the cost of doing what Actor A says.

These first two variables determine ones leverage potential. The degree of leverage potential is a function of 1) the value placed in something and 2) the credibility of the offer or threat to take something. One has a high degree of leverage potential if there is a credible offer or threat to take something of value. On the other hand, if there is nothing of value to offer or threaten to take away, and/or there is no credibility, then there is little to no leverage potential.

The amount of leverage, which may be brought to bear, is a function of the leverage potential versus the cost of compliance. All things being equal, Figure II shows the probable leverage (in the quadrants) as a function of potential leverage (Y axis) and the cost of compliance (X axis). The high leverage quadrant represents a situation where there is a high degree of leverage potential and a low CC. The upper right quadrant represents a situation of low to no leverage. Here there is a high degree of leverage potential and a high CC. The bottom left quadrant also represents a situation of low to no leverage. In this quadrant there is a low degree of leverage potential and a low CC. The no leverage quadrant represents a situation with a low degree of leverage potential and a high CC.

Given the leverage variables, there are four situations that the two players may encounter. First, Player A may be strong in variables one and two and

therefore have a high potential for leverage, provided the CC to Player B is low. Second, if the CC to Player B is low, and Player A is strong in only variable one or two, then a situation of low to no leverage potential exist for Player A. Third, if the CC to Player B is high, and Player A is strong in variables one and two, then once again, a situation of low to no leverage potential exist for Player A. The final situation that may be encountered is when Player A is not strong in either variable one or two and the CC for Player B is high. Consequently Player has no leverage at all. These four situations are also represented graphically in Figure 2.

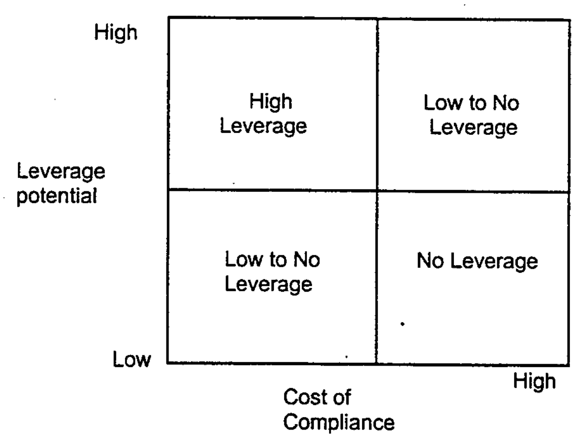

Figure 2. Leverage Potential versus Cost of Compliance.

In the best case, arguably, an actor is able to bring leverage to bear with regards to the three variables. The worst case is to have no leverage with regards to the variables. Most situations will require some enhancement to obtain a position of greater leverage than one's opponent. Leverage is also

subject to change over time, especially as an adversary is able to improve his leverage. Leverage is a zero-sum game. The relative balance of influence in variables.

Economic operations are bargaining relationships and leverage is what determines when economic coercion and warfare are likely to be used effectively. The leverage variables are key to evaluating the likely success of economic operations. Success of economic operations is dependent on the Sender's ability to apply leverage on the Target to bring about compliance.

In the situations of low or no leverage potential (See Figure 2), it is incumbent upon the Sender to analyze the relative influence of the variables and then find ways of enhancing his leverage potential. One way the Sender can enhance his leverage potential is to involve other players. The Sender is more likely to threaten or to take something from the Target if more states are involved with something that the Target values.

A Sender's leverage potential on a Target is influenced by substitution, dependency and active counter measures. Substitution, dependency and active countermeasures correlate to the expected cost of non-compliance (CNC) for the Target. The cost of non-compliance is the cost a Target will incur to counter a Sender's offer or threat of something valued. The degree, to which the target is able to singularly or in combination use substitution, dependency, or active counter measures against the Sender's offer or threat, is inversely proportional to the Target's cost of non-compliance. For example, all things being equal and using a single factor, if the Target has a high capability for substitution, then the

CNC is comparatively low. Or once again, all things being equal if the target is highly dependent on the Sender, the Target's CNC may be comparatively high. The cost is therefore a function of substitutability, dependency, and active countermeasures.

Substitution is the replacement or the obtaining of an object of value with something else of comparable value from an alternate source. For example, if Actor A cannot buy widgets from Actor B, then Actor A buys widgets from Actor C or uses a different comparable widget. The greater the opportunity for substitution, the higher the probability of non-compliance due to the erosion of leverage.

Dependency is the degree to which one is contingent on another. All things being equal, the greater the dependency of the Target on the Sender, the greater the probability of compliance. Conversely, the less dependency, the greater the probability of non-compliance.

Active counter measures are employed either directly or indirectly. Active countermeasures are factors that improve the Targets counter-leverage, as opposed to substitutability and dependency which influence the Sender's leverage. All of these factors work together as a function of CNC. A direct counter measure offers or threatens something of value. For example, Actor A credibly threatens something Actor B values. As a direct counter, Actor B then credibly threatens something Actor values. This example assumes a certain degree of dependency between Actors A and B. There is now a tug of war

between the two actors in whom the ultimate outcome is determined by the CNC versus the CC for both Actors A and B.

An indirect counter measure is when the Target attempts to apply leverage in a roundabout manner. To do this, the Target must utilize intermediary sources, which can deliver a credible offer or threat. For example, an Arab state is unable to counter the leverage potential of a major western power. The Arab state evokes "Arab Sovereignty" to rally the Arab world against the western power to lower the western power's leverage potential on the Arab state. The Arab world also brings leverage to bear against the western power as a credible offer or threat in defense of the Arab State. Similar to the direct counter measure case, a tug of war between the western power and the Arab world develops. The outcome is determined by the CNC associated with the western power pursuing the original threat against the Arab State versus the CC associated with the threat from the Arab world. All things being equal, the Arab state has effectively utilized an intermediary source to bring leverage to bear.

The leverage, which may be brought to bear, is a function of CNC versus CC. There are two possible outcomes. First, if CNC is greater than CC, then there is a situation of compellence, where Player B accepts the terms of Player A. Second, if CC greater than CNC, then there is a situation of defiance, where Player B does not accept the terms of Player A. Leverage is a function of the disparity between CNC and CC. The relationship between CNC and CC determines the amount of leverage that may be brought to bear in a given situation. This is the leverage model adapted from the research of Gordon H. Mc

Cormick, Ph.D. (McCormick, 1998) For example, a Sender has a credible offer or threat to something Target values. The Target however, is able to counter the Sender's leverage as a function of substitutability and dependency. In lowering the leverage potential of the Sender, the Target has also lowered it's CNC. The Target must now decide if it will comply with the threat or not. The target must weigh the value of what it wants (CNC) against the cost of doing what the Sender wants (CC).

Figure 3 graphically displays the Leverage Model. (McCormick, 1998). As explained earlier, substitutability, dependency and active countermeasures influence the degree of leverage potential. CNC is a function of substitutability, dependency and active counter measures. The degree of leverage that may be brought to bear is a function of CNC versus CC. The relationship between CNC and CC is the leverage model. Figure 3 expands on the concepts presented earlier in Figure 2. Figure 3 shows leverage as a function of the CNC (Y-axis) and the CC (X-axis). The white area above the diagonal line represents positions of leverage based on a CNC/CC relationship. The shaded area represents positions of no leverage based on the CNC/CC relationship. In the positions of low or no leverage, it is incumbent upon the Sender to analyze the relative influence of the variables and then find ways on enhancing his leverage potential. One way the Sender can enhance potential is to get other players involved. The Sender is more likely to threaten or take something, if more states are involved with something the Target values.

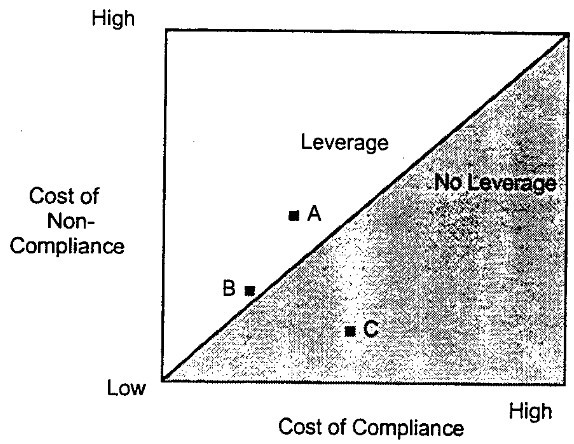

Figure 3. Leverage Model.

There are some considerations to be made with regard to leverage and threats. First, there is the issue of whether to impose a threat publicly or privately. Both public and private threats have advantages and disadvantages, which should be taken into consideration on a situational basis. With a private threat, all parties involved save face. For example, Country A goes to Country B and not only shows them, but gives them a high value target list. Country A then explains to Country B that if it does not comply, then Country A will bomb those high value targets. Country B has no other options and concedes begrudgingly. Point A indicates Country A's leverage position. (See Figure 3). Country A gets what it wants and brings less leverage to bear than would be needed if done publicly. Country B saves face and does not incur the additional cost of being seen to back down in public or the political cost associated with publicly backing down. The disadvantage of a private threat is that there is no credibility for the

next time, which relates to the leverage position moving to point B on the graph. (See Figure 3).

The disadvantage to a public threat is that the Sender will need additional leverage to compensate for the fact that the Target is incurring an additional price to be seen backing down in public. This is indicated by point C on the Leverage Model. (See Figure 3). The advantage of a public challenge is that the Sender is thinking beyond the immediate incident to the future. For example, the United States publicly imposes sanctions against terrorism (US v Iraq, 1980-82; US v Iran, 1984; US v Syria, 1986). The sanctions were not only intended to punish the offender, but to make an example for others in an attempt to deter terrorism. The Sender wants to make an example for others, though it will cost more now. The tradeoff is the increased credibility gained in future operations as indicated by either point A or point B on the Leverage Model. (See Figure 3).

B. SUCCESS CORRELATES OF ECONOMIC SANCTIONS

As a general rule, successful economic operations are characterized by the following common trends and basic policy correlates. All things being equal, the common trends and correlates, which tend to be true, have been discussed in the literature. The correlates that follow, for example, are drawn from the empirical studies of Hufbauer, Schott, and Elloitt's, Economic Sanctions Reconsidered, 1985, Lisa L. Martin, Coercive Cooperation: Explaining Multilateral Economic Sanctions, (1992), and Margret P. Doxey, Economic Sanctions and International Enforcement, (1996). They relate general

correlates for successful sanctions. Economic operations will tend to be successful, it is said, when the following hold:

1. The objective is relatively modest, thus lessening the importance of multilateral cooperation, which is often difficult to obtain. International cooperation with the widest possible international consensus must be obtained to achieve the results for more difficult objectives. This decreases the chances a rival power will bother to step in with offsetting assistance for the target.

2. The target is much smaller, economically weaker, and politically more unstable than the collective sender imposing economic operations.

3. The economic operation must impart some sort of economic hardship after having exhausted all other diplomatic means of the sender.

4. The selected retaliatory economic operation must be appropriate in the view of the nature of the reason the economic operation is imposed and the objective desired. The sender must also consider the target country's internal and external dynamics, which often dictate the most appropriate economic operation to undertake. These actions by the sender may prevent hardening the target's behavior through moderate and flexible economic measures. This in turn may also help to set the example for other potential targets.

5. The burden of the sender of an economic operation should be shared equitably to avoid unduly affecting the individual states of a multilateral

economic operation or the state internally when unilaterally imposed. A cost benefit analysis should be conducted in advance.

The above factors enhance the basic leverage potential of the Sender, thereby increasing the probability that the leverage brought to bear in an economic operation will be successful. Economic operations, as we have said, are deemed to be successful if the Target complies with the Sender's demands. Though there are often mixed domestic and foreign agendas that underline the imposition of economic operations, these actions need not be a controversial or complicated tool of coercive diplomacy. The basic compliance of the Target is dependent on the amount of leverage the Sender has to bring to bear. To impose economic operations as coercive diplomacy, one needs merely to begin examining the leverage potential and then explore ways to enhance one's leverage potential to a point where implementation of economic operations are successful.

V. ECONOMIC OPERATIONS IN THE POST INDUSTRIAL AGE

A. PREFACE

Industrial Age economic operations focused on disrupting or threatening to disrupt the flow of goods, services, and commodities. Continuing scientific discovery, technical progress, and cultural attitudes will change the character of economic life, war, and international relationships in the Post Industrial Age. The vast increases in information technology have promoted greater interlinkage of nations, communications, and information flow. Post Industrial Age economic operations evolved as a result of information technology and its influence on economic systems. Past efforts of economic coercion have been commodity oriented, attempting to disrupt the flow of certain critical commodities for the purpose of bringing political or military pressure to bear. Post Industrial Age economic operations, however, are not about disrupting commodities as such. Post Industrial Age economic operations are about disrupting information systems that allow or underlie the efficient economic operation of a target economy. So rather than target commodities directly, as with Industrial Age economic operations, Post Industrial Age economic operations target information networks, which may directly disrupt commodities flow as a result of inefficient economic operation. (Shubik, 1979, pp. 215)

The Post Industrial Age economic process critically depends on modern information technology. It is therefore better for Post Industrial Age economic

operations to target the information technology dependency. This dependency evolves around the additional high efficiency that information technology lends to the market process. For example, the GNP or income effect associated with a collection of small local markets is significantly lower than the national income effect associated with a single highly efficient national market. Modern information technology allows the economic process to engage a large national market in real time. This is opposed to the traditional economic process, which has been, to a greater or lesser degree, dependent on collections of local markets in the absence of an efficient real time method of nationally prosecuting market transactions. So there are efficiency effects that transfer at the higher national income levels associated with introducing modern information technology. Targeting this can disintegrate a national economy in singular or multiple sectors and can do so very rapidly. (McCormick, 1998)

The Post Industrial Age economic operations introduce new instruments that are targeted at new dependencies brought about by information technology. If one is able to target the dependencies successfully, the new instruments offer a promise to have an impact much greater than the sum of their parts. In a sense, the new economic instruments target the inherent efficiency of the modern Post Industrial economy. A significant percentage of the national income of the modern economy is dependent on maintaining efficiencies. The new instruments take this away. The new instruments can be perfected in and of themselves, so that a small amount of effort generates a big effect. (McCormick, 1998)

There is an aimed approach to Post Industrial Age economic operations that allows the sanctioning country to target "the enemy" instead of the vulnerable sectors of the targeted society, the poor, the very young, the very old, and the sick. There was a hypocrisy during the Industrial Age when a sanctioning country campaigned for oppressed women one day, then imposed an embargo which increased infant mortality the next. Traditional economic sanctions most often impact the lowest strata of society and miss inspiring the political response that the Sender desires. This is due to the fact that regimes, the elite, and companies in a target country, more often than not, have the ability to isolate themselves from the economic hardship of sanctions. Traditional economic sanctions are dull instruments that, more often than not, deliver a broad detrimental impact on the population of a target country. This dull instrument has become less acceptable in today's society, which focuses more and more on the humanitarian impact and economic destruction of the target country. (Hufbauer, 1997, pp. 1) Post Industrial Age economic operations, which orient primarily on information systems, have a greater ability to focus the Sender's aim on the true target: regimes, the elite, and companies.

Post Industrial Age economic operations are not entirely new. Post Industrial Age economic operations still employ the Industrial Age economic measures of aid, trade, and finance, but attempt to target the systems basis of these economic functions. This section speculates on economic operations in the Post Industrial Age.

B. ECONOMIC INSTRUMENTS OF THE POST INDUSTRIAL AGE

Economic instruments of the Post Industrial Age can both cost less for the Sender and cost more to the Target. Their potential impact on regimes, the elite, and companies, all things being equal, is significantly greater. Information technology makes this possible. Economic instruments in the Post Industrial Age target four systems: information, finance, market, and electronic. These four systems produce four categories of economic instruments: information manipulation, financial manipulation, market manipulation, and electronic manipulation.

Information manipulation is using data to mislead, gain a position of leverage, or gain intelligence for the purpose of bringing economic hardship on a Target. Information in modern society has become the target of potentially hostile groups and nations to apply coercive pressure or warfare. Individuals are also creating havoc by breaking into secure networks and disrupting services or committing other criminal acts. Examples of such disinformation campaigns are the dissemination of misinformation about the quality or safety of a target state's products or the safety conditions for tourists. (Reisman, 1992, pp. 30)

The following case, United States versus Colombia (1996), taken from Hufbauer and Winston's <u>Smarter Sanctions: Updating the Economic Weapon</u> (1997), is an example of information manipulation aimed at regimes and companies. In 1996 President Clinton decertified Colombia for inadequate cooperation against narcotics trafficking. Narcotics shipments were regularly entering the United States disguised as legitimate merchandise. Aid was

suspended to the country, but additional trade sanctions were not imposed. President Clinton appeared to take the advice of President Ernesto Samper, who in response to threats of trade sanctions, reminded the United States government that farmers will grow drugs if not allowed to cultivate bananas, flowers, and coffee. Instead the United States created a list of individuals and companies with known links to the Cali drug cartel. They were then barred from doing business in the United States.

In the case, United States versus Colombia (1996), we see information being used by Colombia to make claims in such a way as to mislead the United States into thinking that sanctioning Colombia would force farmers to grow drugs. The United States used information to obtain a blacklist of individuals and companies. With this list there was an attempt to disrupt the financial processes of the Cartel.

Financial manipulation can be defined as any act that tampers with the fiscal processes of a Target. An example of financial manipulation is the proactive external movement of funds or the infiltration of funds into a country to improve its market situation and consequently influencing its political elections. (Reisman, 1992, pp. 30) The injection of massive quantities of currency into a country may also be used as a tactic of economic warfare. Another possibility uses misinformation and currency sabotage by leaking a false report from the Open Market committee to cause a run on Country A's currency. (Shubik, 1979, pp. 224)

Market manipulation is the tampering with trade to create economic hardship for the Target. Sender control over a target's position in the world market, for example, can make a target state vulnerable to economic destabilization. Not only is the current government vulnerable to economic hardships, but by causing the government to be preoccupied with external matters, the target state's influence is in jeopardy. (Shubik, 1979)

Another possibility is manipulating the food industry. Food export cartels could be an important force in economic warfare. The concern here is the conflicts with ethical beliefs, public opinion, and governmental policy. (Shubik, 1979, pp. 220)

Still another example is manipulating a Target's market perception when the Sender has a clear advantage in the damage exchange rate. If the Target perceives a need to "keep up with the Jones," as in an arms race situation, then the Target is more likely to pour in and lock up technical and general resources.

Electronic manipulation is the orchestration of economic hardship through the use of computers and networks. For example, the introduction of computer viruses can be used to destroy or incapacitate the financial network of a target. Electronic manipulation increases the vulnerabilities of a target state through electronic attacks on the Target's system.

The next two examples deal with credit and data bank systems. A Sender disrupting check clearing facilities and preventing checks from clearing could cause a monetary change in the float and confusion and discomfort for a Target. A technically savvy Sender could also flood the market of a Target with duplicate

credit cards or distort the bank data on credit information, creating havoc to the Target's credit system. Data bank and computer communication sabotage become more probable and effective as credit systems become more sophisticated. (Shubik, 1979, pp. 227)

The Post Industrial Age experiences increasing international linkage and interdependence. The international community is therefore subject to new economic instruments and the many effects they might have on the international economy if imposed as economic diplomacy. Economic instruments must be continually updated because there is a spectrum that conventional and unconventional economic operations oscillate continuously. As economic instruments evolve, blend into each other, and become universally accepted or rejected, the boundary between conventional and unconventional economic operations moves back and forth along a continuum. Economic instruments that are acceptable within the norms and laws of the international community are on the contemporary side of the continuum. Economic instruments that are new in concept or use, unacceptable to established norms, or unlawful by international law are on the unconventional side of the continuum. Piracy and smuggling are examples of economic instruments on the fringes of being unconventional due to their being either unlawful or outside established norms of economic conduct. (Shubik, 1979, pp. 213)

The Post Industrial Age economic operations use information based economic instruments to impose economic hardship. Information based economic instruments enable a Sender to attack the economic function of a

Target state across a broad spectrum of the economy. While the tools are often new, the end goal is the same, to gain a position of leverage to enable the Sender to modify the behavior of a Target.

C. IMPOSING ECONOMIC OPERATIONS IN THE POST INDUSTRIAL AGE

There are some other aspects of imposing economic instruments in the Post Industrial age which merit discussion. The continuum mentioned previously allows economic instruments to be imposed either conventionally or unconventionally. Conventional economic instruments involve universally accepted actions that generally conform to international law. Unconventional economic instruments have the ability to deliver economic hardships through other than accepted means. For example, counterfeiting of another state's currency and the infiltration of forged bills into the international market would be characterized by most as unconventional as well as unlawful. (Riesman, 1992, pp. 30) In the Post Industrial Age, both unconventional and conventional instruments use information as a tool to bring about economic hardship

Economic instruments may also be implemented in an overt or covert manner. Whatever can be done overtly may also be done covertly. An overt use of an economic instrument is communicative as well as destructive. The Target has the option of modifying certain behavior in order to have the economic hardship terminated. On the other hand, the covert use of the same economic instrument sends no message. The Target may not recognize the action as a signal to modify behavior, know who the Sender is, or what action might be taken

to end the economic hardship. Overt use of economic instruments is open for international scrutiny while covert use of the coercive economic operations is not.

As the international economic system becomes more interdependent, information technology provides the possibilities for larger states to use economic instruments covertly against smaller states that could make a mockery of many formal norms. An example of this is the movement of funds or the infiltration of funds into a country to improve its market situation and consequently influencing its political elections. (Reisman, 1992, pp. 30) At the same time unconventional and covert instruments make it possible for unscrupulous smaller states to impose economic leverage on larger states for self-serving purposes. An example of this is bribery. (Reisman, 1992, pp. 29)

D. COMMENTS ON SUCCESS OF ECONOMIC OPERATIONS IN THE POST INDUSTRIAL AGE

Information technology broadens the range of economic instruments for the would-be Target as well as the Sender. Information levels the playing field by making it possible for a smaller Sender to impose sanctions on a relatively larger Target. Leverage is still the key to gaining a position of influence in the Post Industrial Age and is dependent on the technological ability of the Sender or Target. Information based economic instruments reduce the implementation costs to the Sender because of the systems orientation. Information based economic instruments also reduce the damage to the Target. However, unilaterally speaking, Post Industrial Age economic instruments tend to raise the

cost of gaining leverage potential because of the high ability for substitution due to increased interlinkage and interdependence of the international community.

The post WWII era is marked by a great interest in human rights. A Sender state will gain political points by imposing economic instruments which are less punishing to the powerless citizens of a state. These reductions increase the political clout of the Sender both internally and externally. The economic instruments involved, however, must still carry a degree of economic impact necessary to gain the objective desired. All economic operations have varying degrees of political and economic effectiveness. The volume of economic damage that a Sender is able to impose is integral to the probability of success.

VI. CONCLUSION

Economic operations in the service of coercive diplomacy face many criticisms. A few of the criticisms are the humanitarian impact of economic operations, the economic destruction of the target country, the commercial cost, and mostly, whether these economic operations work at all. Actions over the past forty years indicate that economic operations are more often the policy of choice as a means of coercive diplomacy. Economic operations provide an alternative to military force, and are hoped to provide a big effect at a small price in meeting foreign policy objectives.

Economic operations merit re-examining due to the changing environment. Just as technology and tactics for the use of military force continually change, the economic instruments for coercive economic diplomacy must also adapt to technological advances and economic realities. As a result of advancements in information technology the commodities focus of economic operations in the Industrial Age changed in the Post Industrial Age to a focus on information systems. The new instruments of the Post Industrial Age economic operations changed the opportunities and constraints of the Sender and Ttarget states. In light of these changes and the ongoing criticisms of economic operations, sanctions may not survive as a very viable policy tool without redefinition and re-examination.

This thesis initially looked at the rich history of economic operations. The discussion focused on the development of economic thought and the relationship between strategy and economics. The highlights of this section are:

1. Technological innovation has been the most dynamic source of economic change and development.
2. Economic operations enter the realm of diplomacy with Mercantilism.
3. Prior to WWI, economic operations foreshadowed or accompanied armed conflict.
4. As a means of coercive diplomacy, economic operations become an alternative to armed force after WWII.

Governments use coercive diplomacy to achieve their foreign policies. Coercive diplomacy is the use of pressure to achieve the foreign policies or political objectives of a particular government or governments. The second section defines the terms used for coercive economic operations. The important points in this section are:

1. Economic operations apply the use of pressure to achieve political objectives through economic coercion or warfare.
2. Economic coercion modifies the "will" of a Target through deterrence or compellence.
3. Economic warfare undermines the Target's ability to conduct a certain behavior or activity.

4. The categories of instruments for traditional economic operations are aid, trade, and finance.

The third section examines the economic activities of the Industrial Age, which broadened the realm of economic operations and the implementation of economic warfare and coercion. Industrial Age economic operations have typically focused on disrupting or threatening to disrupt the flow of goods and commodities. The Sender, by influencing the flow of goods and commodities, brings about behavior modification of the Target. The highlights of the third section are:

1. Industrial Age economic operations have been commodities oriented.
2. The categories of economic instruments can be further delineated into specific instruments to apply economic pressure.
3. Industrial Age economic diplomacy has often attempted to legislate behavior in human rights, nuclear safety, and terrorism.

There is an ongoing debate over whether economic operations are effective tools for the implementation of foreign policy. The fourth section focuses on examining analytically and then empirically the variables that determine the probable success or failure of economic operations. The important points in this section are:

1. Bargaining relationships are based on leverage.

2. There are three variables that determine one's ability to bring leverage to bear.
3. The leverage model states that leverage is a function of the cost of non-compliance versus the cost of compliance.
4. There are basic policy correlates that characterize successful economic operations.

The fifth section discusses economic operations in the Post Industrial Age. Vast increases in information technology have promoted greater interlinkage of nations, communications, and information flow. Post Industrial Age economic operations evolved as a result of information technology and its influence on economic systems. The Post Industrial Age economic process critically depends on modern information technology. The highlights of this section are:

1. Post Industrial Age economic operations disrupt information systems that allow or underlie the efficient economic operation of a target.
2. Post Industrial Age economic operations introduce new instruments that are targeted at new dependencies brought about by information technology.
3. Economic instruments in the Post Industrial Age target and manipulate four systems, information, finance, market, and, electronic.

All economic operations have varying degrees of political and economic effectiveness. Economic operations must be adapted to the political and economic realities of today. Economic operations must be thought through in order to design an appropriate sanction and to determine when imposing a sanction is a rational choice. There are some issues that require further investigation because of the potential impact they have on the successful implementation of economic operations. These issues are also food for thought that will help guide policy makers in designing intelligent sanctions.

1. Foreign policy versus domestic policy. Are sanctions imposed for foreign policy objectives or to satisfy domestic pressures on the government to do something?
2. Dynamic versus static. Is a short or long term effect desired from the sanction? Dynamic sanctions must take into consideration reconstitution and regeneration by the Target.
3. Authoritarian versus democratic regime. Sanctions are dull instruments that attack the economy and undermine the GNP. The ability to influence the behavior of a dictator under certain circumstances depends on how much the dictator cares about his own people.
4. Implicit and explicit costs.

    a. Sanctions not only impose cost on the Target but on the Sender as well. What is the risk?

b. There is an implicit cost for the Sender to give a Target alternate sources of trade thereby redefining trade away from the sender.

c. There is the implicit and explicit nature of sanctions as a function of the implementation cost of the sanction and the risk of outcome. This is the expected cost and a risk the Sender must consider.

5. Law of unintended consequences. The Sender imposes a sanction to modify a regime. The objective to modify the regime fails, but the sanction is successful in crippling the Target's economy and creating a bigger problem than the original one.
6. Continuing versus lifting a sanction. How should a Sender respond if the Target does not respond? How long should the Sender continue a sanction if the original goal fails, and when should the Sender throttle back? When is it beneficial to for the Sender to backdown? Why continue with a sanction?

Economic operations in the information age require urgent reconsideration and updating. This thesis addresses the economic aspect of coercive diplomacy to show that new instruments of coercive economic operations created by information age technology 1) redefine coercive economic operations and that 2) the vulnerabilities and concerns brought about by these new economic instruments change the impact coercive economic operations have on coercive

diplomacy. The intent is to guide continuing future thought on coercive economic operations. It is important that policy makers become aware of the new information based economic instruments that impact coercive economic diplomacy. Economic sanctions can provide a useful alternative or compliment to diplomacy and military force, but without the constant upgrading and re-examining of economic instruments, economic sanctions may not survive into the future as a viable foreign policy tool.

LIST OF REFERENCES

Cameron, Rondo, A Concise Economic History of the World, Oxford, Oxford University Press, 1997.

Daoudi, M. S. and Dajani, M. S., Economic Sanctions: Ideals and Experience, London, Routledge and Kegan Paul Press, 1983.

Doxey, Margaret P., Economic Sanctions and International Enforcement, Oxford, London, Oxford University Press, 1971.

Doxey, Margret P., International Sanctions in Contemporary Perspective, London, MacMillan Press, 1996.

Doxely, Margret P., International Sanctions: A framework for Analysis with Special Reference to the UN and Southern Africa, International Organization, Summer 1972.

Hufbauer, Gary C. and Schott, Jeffrey J., Economic Sanctions Reconsidered: History and Current Policy, Washington, D.C., Institute for International Economics, 1985.

Hufbauer, Gary C. and Winston, Elizabeth, Smarter Sanctions: Updating the Economic Weapon, NSR Vol. 7, No. 2 Summer 1997.

Martin, Lisa L., Coercive Cooperation: Explaining Multilateral Economic Sanctions, Princeton, New Jersey, Princeton University Press, 1992.

McCormick, Gordon H., Unpublished research notes, 1998.

McCormick, Gordon H. and Bissell, Richard E., Strategic Dimensions of Economic Behavior, New York, Praeger Publishers, 1984.

Reisman, Micheal W. and Baker, James E., Regulating Covert Action, London, Yale University Press, 1992.

Shubik, Martin, Conflict, Volume 1, Number 3, “Unconventional Methods of Economic Warfare”, New York, Crane, Russak and Company, 1979.

Straffin, Philip D., Game Theory and Strategy, Washington, The Mathematical Association of America, 1993.

Wientraub, Sidney, Economic Coercion and U.S. Foreign Policy, Boulder, Colorado, Westveiw Press, 1982.

BIBLIOGRAPHY

Alting von Geusan, Frans A.M. and Pelkmans, Jacques, National Economic Security: Perceptions, Threats and Policies, Netherlands, John F. Kennedy Institute, 1982.

Brown, David Leyton, The Utility of International Economic Sanctions, Australia, Croom Helm, 1987.

Campen, Alan D. and Dearth, Douglas H. and Godden, Thomas R., Cyberwar: Security, Strategy and Conflict in the Information Age, Fairfax, Virginia, AFCEA International Press, 1996.

Carnoy, Martin and Castells, Manuel and Cohen, Stephen S. and Cardoso, Fernando H., The New Global Economy in the Information Age, University Park, Pennsylvania, Pennsylvania State University Press, 1993.

Corthight, David and Lopez, George A., Economic Sanctions: Panacea or Peacebuilding in a Post-Cold War World?, Boulder, Colorado, Westview Press, 1995.

Daoudi, M.S. and Dajani, M.S., Economic Diplomacy: Embargo Leverage and World Politics, Boulder, Colorado, Westview Press, 1985.

Ellings, Richard J., Embargoes and World Power, Boulder, CO, Westview Press, 1985.

Fialka, John J., War by Other Means: Economic Espionage in America, New York, W. W. Norton & Company, 1997.

Guralnick, David B., Webster's New World Dictionary, New York, NY, Prentice Hall Press, 1986.

Hufbauer, Gary C. and Schott, Jeffrey J., Economic Sanctions Reconsidered Supplemental Case Histories, Washington, D.C., Institute for International Economics, 1990.

Losman, Donald L., International Economic Sanctions, New Mexico, University of New Mexico Press, 1979.

Richardson, Neil, Foreign Policy and Economic Dependence, Austin, Texas, University of Texas Press, 1978.

Wu, Yuan-Li, Economic Warfare, New York, Prentice-Hall, 1952.

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